ANNEXURE-D

BANGALORE METROPOLITAN TRANSPORT CORPORATION
CENTRAL OFFICES, STORES AND PURCHASE BRANCH, BANGALORE-27

Specifications for Polyurethane Sealants for Bus Body application **Dated: 14.10.2022**

Sl.No.	Description	Requirement
1	**Weathering resistant polyurethane sealant for metal to metal sealing:**	
	Requirement: Multi Purpose, Non Sag , Single part plastic, highly resistant to UV radiation, fast curing, polyurethane based adhesive sealant which cures on exposure to atmospheric moisture to form a high performance permanently flexible non sag adhesive sealant. Good resistance to weathering and ageing. Sealant should comply to EN45545 Standard and manufacturer should provide a test certificate for the same.	
	Technical Product Data:	
1.1	Chemical Base	One Part Polyurethane
1.2	Cure Mechanism	Moisture Curing Polyurethane
1.3	Density (DIN 53479) (Uncured)	1.10 to 1.40 gm/cc
1.4	Skin Time @ 23 degree C and 50 % RH	20 to 60 minutes so that tooling is possible
1.5	Curing at 23°C / 50 %RH	3mm/ 24 Hrs
1.6	Hardness Shore A (DIN 53504)	35 to 55
1.7	Elongation at Break (DIN 53504)	300% Minimum
1.8	Tensile Strength (DIN 53504)	1.6 N/mm^2 Minimum
1.9	Application Temperature	+5°C to +40°C
1.10	Service temperature	-40°C to +90°C
1.11	Colour	Black /White
1.12	Shelf Life (Stored below 23 degree C)	9 Months from the date of manufacturing or 5 months from the date of deliveries.
2	**Weathering resistant polyurethane sealant for metal to ceramic frit glass:**	
	Requirement: Multi Purpose, Non Sag , Single part plastic, highly resistant to UV radiation, fast curing, polyurethane based adhesive sealant which cures on exposure to atmospheric moisture to form a high performance permanently flexible non sag adhesive sealant. Good resistance to weathering and ageing. Sealant should comply to EN45545 Standard and manufacturer should provide a test certificate for the same.	
	Technical Product Data:	
2.1	Chemical Base	One Part Polyurethane
2.2	Cure Mechanism	Moisture Curing Polyurethane
2.3	Density (DIN 53479) (Uncured)	1.20 to 1.40 gm/cc
2.4	Skin Time @ 23 degree c and 50 % RH	20 to 60 minutes so that tooling is possible
2.5	Curing at 23°C / 50 %RH	3mm/ 24 Hrs
2.6	Hardness Shore A (DIN 53504)	35 to 60
2.7	Elongation at Break (DIN 53504)	300% Minimum
2.8	Tensile Strength (DIN 53504)	4N/mm^2 Minimum
2.9	Application Temperature	+5°C to +35°C
2.10	Service temperature	-40°C to +90°C
2.11	Colour	Black
2.12	Cleaner or Activator	Isopropanol in aqueous solution
2.13	Primer	Black- Single Step Primer
2.14	Fire Norms	Shall meet EN45545 fire norms (Suppliers to enclose EN 45545 certificate)
2.15	Shelf Life (Stored below 23 degree C)	9 Months from the date of manufacturing or 5 months from the date of deliveries.

3	**Adhesive for Bonding Purpose (Metal to FRP and Metal to Wood)**	
	Requirement: Multi Purpose, Non Sag, Single part plastic, highly resistant to UV radiation, fast curing, and polyurethane based adhesive sealant which cures on exposure to atmospheric moisture to form a high performance permanently flexible non sag adhesive sealant. Good resistance to weathering and ageing. Sealant should comply to EN45545 Standard and manufacturer should provide a test certificate for the same.	
	Technical Product Data:	
3.1	Chemical Base	One Part Polyurethane
3.2	Cure Mechanism	Moisture Curing Polyurethane
3.3	Density (DIN 53479) (Uncured)	1.10 to 1.40 gm/cc
3.4	Skin Time @ 23 degree C and 50 % RH	20 to 60 minutes so that tooling is possible
3.5	Curing at 23°C / 50 %RH	3mm/ 24 Hrs
3.6	Hardness Shore A (DIN 53504)	35 to 55
3.7	Elongation at Break (DIN 53504)	300% Minimum
3.8	Tensile Strength (DIN 53504)	1.6 N/mm^2 Minimum
3.9	Application Temperature	+5°C to +35°C
3.10	Service temperature	-40°C to +90°C
3.11	Colour	Black /White
3.12	Shelf Life (Stored below 23 degree C)	9 Months from the date of manufacturing or 5 months from the date of deliveries.
3.13	Primer	Black
3.14	Fire Norms	Shall meet EN45545 fire norms (Suppliers to enclose EN 45545 certificate)
3.15	Shelf Life (Stored below 23 degree C)	9 Months from the date of manufacturing or 5 months from the date of deliveries.
4	**Primer for Bonding and Direct Glazing:**	
4.1	**Requirement:** Pigmented, Solvent-based Primer for various substrates.	
4.2	Chemical base	Solvent-based polyurethane solution
4.3	Density	0.99gm/cc approx
4.4	Flash Off	10 minutes (Above 5 Degree)
4.5	Dry Time	5 Minutes Minimum & 24 Hours maximum
4.6	Solid Contents	25% Approx
4.7	Consumption	Depending on substrate porosity ,50 to 150 ml per m^2 depending on substrates
4.8	Shelf Life (Storage below 23 degree C)	12 Months from the date of manufacturing or 8 months from the date of deliveries.

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